

CLAIMS

What is Claimed is:

1. A method for providing real-time communication to a subscriber outside a home system in a communication network, wherein the communication network includes the home system and a roaming system, the method comprising the steps of:
- 5 providing access to a home switch located in the home system;
 - providing access to a roaming switch located in the roaming system;
 - providing access to a trunk operatively connecting the home switch to the roaming switch;
 - 10 providing the subscriber with a universal address that can be mapped to one or more addresses of the subscriber;
 - storing the universal address in a database operatively connected to the home switch and the roaming switch;
 - 15 providing the subscriber with a local mobile station having a local roaming address code within the roaming system;
 - updating the universal address to map to the local address code; and
 - allowing the subscriber to receive incoming calls from the universal address within the roaming system through the local mobile station without incurring roaming charges.
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2. The method of Claim 1 further comprising the steps of:
- when a caller attempts to reach the subscriber from the home system using the universal address:
 - receiving a call from the caller at the home switch;
 - 25 accessing the database to map the universal address to the local roaming address code;
 - routing the call from the home switch to the roaming switch; and
 - initiating a local call from the roaming switch to the local mobile station using the local roaming address code.

3. The method of Claim 2 wherein the accessing step comprises dynamically accessing the database to map, in real-time, the universal address to the local roaming address code.

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4. The method of Claim 2 further comprising the steps of:

identifying the roaming switch using the local roaming address code; and

routing the call from the home switch through the trunk with instructions to reach the roaming switch and initiate the local call to the local mobile station using the local
10 roaming address code.

5. The method of Claim 2 further comprising the steps of:

identifying the roaming switch using the local roaming address code; and

routing the call from the home switch with instructions to follow a least-cost route
15 to the roaming switch and initiate the local call to the local mobile station using the local
roaming address code.

6. The method of Claim 2 further comprising the steps of:

providing access to a telephony server in the home system, the telephony server

20 operatively connected to the home switch and the database;

receiving the call from the caller at home switch;

routing the call from the home switch to the telephony server;

accessing the database through the telephony server to map the universal
address to the local roaming address code;

25 identifying the roaming switch using the local roaming address code;

routing the call from the home switch with instructions to reach the roaming
switch and initiate the local call to the local mobile station using the local roaming
address code.

7. The method of Claim 2 further comprising the steps of:

identifying the caller before accessing the database to map the universal address to the local roaming address code.

5 8. The method of Claim 1 further comprising the step of:

when the subscriber attempts to reach a callee at a local home address code in the home system from the roaming system using the local mobile station:

receiving a call from the subscriber at the roaming switch;

routing the call from the roaming switch, through the trunk, to the home switch;

10 and

initiating a local call from the home switch to the local home address code.

9. The method of Claim 8 further comprising the steps of:

identifying the home switch using the local home address code; and

15 routing the call from the roaming switch through the trunk with instructions to reach the home switch and initiate the local call to the local home address code.

10. The method of Claim 8 further comprising the steps of:

identifying the home switch using the local home address code; and

20 routing the call from the roaming switch with instructions to follow a least-cost route to the home switch and initiate the local call to the local home address code.

11. The method of Claim 8 further comprising the steps of:

identifying the subscriber before routing the call from the roaming switch to the

25 home switch.

12. The method of Claim 11 further comprising the step of:

providing access to an automatic speech recognition system for identifying the subscriber.

13. The method of Claim 1 wherein the updating step further comprises the steps of:

providing access to an automatic number identification system operatively

5 connected to the local mobile station and the database;

prompting the subscriber to call the automatic number identification system using the local mobile station;

identifying the local roaming address code using the automatic number identification system; and

10 automatically updating the universal address to map to the local roaming address code.

14. A communication system for providing real-time communication to a subscriber, the communication system comprising:

a home network having a home switch for receiving a call from a caller;

a roaming network having a roaming switch;

5 a trunk operatively connecting the home switch to the roaming switch;

a universal address for the subscriber, wherein the universal address can be mapped to one or more address of the subscriber;

10 a memory, operatively coupled to the home switch and the roaming switch, for storing the universal address; and

15 a local mobile station having a local roaming address code within the roaming system,

wherein, when the subscriber travels from the home network to the roaming network, the communication system:

15 provides the subscriber with the local mobile station,

updates the universal address to map to the local roaming address code, and

20 allows the subscriber to receiving incoming calls from the universal address within the roaming system through the local mobile station without incurring roaming charges.

25 15. The communication system of Claim 14 further comprising:

a system for prompting the caller for the universal address,

wherein, when the caller attempts to reach the subscriber from the home system using the universal address, the communication system:

receives the call at the home switch,

25 prompts the caller for the universal address,

accesses the memory to map the universal address to the local roaming address code,

routes the call from the home switch to the roaming switch, and

initiates a local call from the roaming switch to the local mobile station using the local roaming address code.

16. The communication system of Claim 15 further comprising a system for
5 identifying the roaming switch using the local roaming address code, wherein, the call is
routed from the home switch with instructions to reach the roaming switch and initiate
the local call to the local mobile station using the local roaming address code.

17. The communication system of Claim 16 further comprising a system for
10 determining a least-cost route between the home switch and the roaming switch,
wherein, the call is routed from the home switch with instructions to follow the least-cost
route to the roaming switch and initiate the local call to the local mobile station using the
local roaming address code.

15 18. The communication system of Claim 15 further comprising:

20 a telephony server in the home system, the telephony server operatively
connected to the home switch and the memory, wherein, when the caller attempts to
reach the subscriber from the home system using the universal address, the
communication system:

receives the call at the home switch,
routes the call from the home switch to the telephony server,
accesses the memory to map the universal address to the local roaming address
code,

25 identifies the roaming switch using the local roaming address code, and
routes the call from the home switch with instructions to reach the roaming switch
and initiate the local call to the local mobile station using the local roaming address
code.

19. The communication system of Claim 14 further comprising a system for identifying the subscriber, wherein, when the subscriber attempts to reach a callee at a local home address code in the home system from the roaming system using the local

5 mobile station, the communication system:

identifies the subscriber,

receives a call from the subscriber at the roaming switch,

routes the call from the roaming switch, through the trunk, to the home switch, and

10 initiates a local call from the home switch to the local home address code.

20. The communication system of Claim 19 further comprising a system for identifying the home switch using the local home address code, wherein, when the subscriber attempts to reach the callee at the local home address code, the communication system:

identifies the home switch using the local address code; and

routes the call from the roaming switch with instructions to reach the home switch and initiate the local call to the local home address code.

21. The communication system of claim 20 further comprising a system for determining a least-cost route between the roaming switch and the home switch, wherein, the call is routed from the roaming switch with instructions to follow the least-cost route to the home switch and initiate the local call to the local home address code.

22. The communication system of claim 14 further comprising an automatic number identification system operatively connected to the local mobile station and the memory, wherein, the subscriber is prompted to call the automatic number identification system using the local mobile station, the automatic number identification system 5 automatically identifies the local roaming address code, and the universal address in the memory is updated to map to the local roaming address code.

23. A communication system for providing real-time communication to a subscriber, the communication system comprising:

- 10 a home network having a home PBX for receiving a call from a caller;
- a roaming network having a roaming PBX;
- means for operatively connecting the home PBX to the roaming PBX;
- a universal address for the subscriber;
- means for dynamically mapping the universal address to one or more addresses 15 of the subscriber;
- means for storing the universal address so that it can be accessed, in real-time, by the home PBX and the roaming PBX;
- a local mobile station having a local roaming address code within the roaming system;
- means for providing the subscriber with the local mobile station when he travels 20 to the roaming network;
- means for updating the universal address to map to the local roaming code; and
- means for the subscriber to communicate with others in real-time through the local mobile station using the universal address within the roaming system without 25 incurring roaming charges.

24. The communication system of Claim 23 further comprising:
means for receiving the call at the home PBX;
means for prompting the caller for the universal address;
means for accessing the database to map the universal address to the local
roaming address code;
means for routing the call from the home PBX to the roaming PBX; and
means for initiating a local call from the roaming PBX to the local mobile station
using the local roaming address code.

10 25. The communication system of Claim 24 further comprising:

means for identifying the roaming PBX using the local roaming address code;

and

means for routing the call from the home PBX with instructions to reach the
roaming PBX and initiate the local call to the local mobile station using the local roaming
address code.

15 26. The communication system of Claim 25 further comprising:

means for determining a least-cost route between the home PBX and the
roaming PBX; and

20 means for routing the call from the home PBX with instructions to follow the least-
cost route to the roaming PBX and initiate the local call to the local mobile station using
the local roaming address code.

27. The communication system of Claim 24 further comprising:

a telephony server in the home system, the telephony server operatively connected to the home PBX and the database;

means for routing the call from the home PBX to the telephony server;

5 means for identifying the roaming PBX using the local roaming address code; and

means for routing the call from the telephony server to the home PBX with instructions to reach the roaming PBX and initiate the local call to the local mobile station using the local roaming address code.

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28. The communication system of Claim 23 further comprising:

means for, when the subscriber attempts to reach a callee at a local home address code in the home system from the roaming system using the local mobile station, receiving a call from the subscriber at the roaming PBX;

15 means for routing the call from the roaming PBX to the home PBX; and

means for initiating a local call from the home PBX to the local home address code.

20 29. The communication system of Claim 28 further comprising:

means for identifying the home PBX using the local home address code; and

means for routing the call from the roaming PBX with instructions to reach the home PBX and initiate the local call to the local home address code.

30. The communication system of Claim 29 further comprising:

25 means for determining a least-cost route between the roaming PBX and the home PBX; and

means for routing the call from the roaming PBX with instructions to follow the least-cost route to the home PBX and initiate the local call to the local home address code.

31. The communication system of Claim 23 further comprising:
means for automatically identifying the local roaming address code when the
subscriber accesses the communication system using the local mobile station and
5 updating the universal address to map to the local roaming address code.

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